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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/696,416	10/28/2003	Sanjay Verma	3222-5	5357

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EXAMINER	
PYO, MONICA M	

ART UNIT	PAPER NUMBER
2161	

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/696,416	VERMA ET AL.	
	Examiner	Art Unit	
	Monica M. Pyo	2161	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *17 May 2007*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-23* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-23* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *28 October 2003* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date *3/5/07, 3/14/07*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

1. This communication is responsive to Amendment filed 5/17/2007. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 3/5/2007 has been entered.

2. Claims 1-23 are currently pending in this application. Claims 1, 5, 10, 14, 18 and 23 are independent claims. In the Amendment filed on 5/17/2007, claims 1-2, 5-6, 10, 13-14, 17-19 are amended and claims 22-23 are newly added.

Information Disclosure Statement

3. The information disclosure statement (IDS) submitted on 3/5/2007 and 3/14/2007 were filed and considered by the examiner.

Declaration under Rule 37 C.F.R.§ 1.31 Affidavits

4. No additionally information has been filed since the prior Office Action.

Remarks

5. Regarding claims 14-17, for the examining purpose, the Examiner interprets and treats the phrase "computer readable media" to include only volatile and non-volatile memory devices.

Claim Objections

6. Claim 9 is objected to because of the following informalities:

Regarding claim 9, applicant recites "A method" in this dependent claim. The phrase "A method" should be changed to "The system" in this claim.

Appropriate correction is required.

Specification

7. The amendment to claims has been received on 5/17/2007. The changes are acknowledged and therefore, the specification objections (as explained on page 12 of Remarks) made in a prior Office Action are withdrawn.

Claim Rejections - 35 USC § 103

8. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

9. Claims 1-2, 4-6 and 8-23 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent Application Publication No. 2004/0220933 by Walker (hereinafter Walker) in view of U.S. Patent Application Publication No. 2004/0205066 by Bhattacharjee et al. (hereinafter Bhattacharjee), and further in view of U.S. Patent No. 4,627,019 issued to Ng (hereinafter Ng).

Regarding Claims 1 and 5, Walker discloses a database management system, comprising:

A). a processor associating a subgroup of actions on an associated group of data, as to lock additional resources with same operation ID (Walker: pg. 18, [0322 & 0324-0325]).

Walker does not explicitly disclose:

B). the processor associating with separate lock durations each different subgroup of program instructions associated with the activities in the transaction, and

maintaining locks for the duration of the activities and then releasing the locks when the subgroup of program instructions associated with the activities are completed.

However, Bhattacharjee discloses:

B). the processor associating with separate lock durations each different subgroup of program instructions associated with the activities in the transaction, and maintaining locks for the duration of the activities and then releasing the locks when the subgroup of program instructions associated with the activities are completed, as the lock duration is shared by transactions and the lock durations of two may be incremented or decremented by a transaction (Bhattacharjee: pg. 5, [0062]; pg. 11, [0146-0147]; fig. 1)

It would have been obvious to a person with ordinary skill in the art at the time of invention to modify the teachings of Walker with the teachings of Bhattacharjee to utilize the the multi-level locking system with the motivation to enhance the method of releasing block locks (Bhattacharjee: pg. 2, [0017]).

Walker and Bhattacharjee does not explicitly disclose:

A). multiple different activities with a same transaction, each of the activities consisting of an associated subgroup of program instructions for the same transaction that initiate;

However, Ng discloses:

A). multiple different activities with a same transaction, each of the activities consisting of an associated subgroup of program instructions for the same transaction that initiate, as to different process ID identifies the process of which the transaction of block is a part (Ng: col. 5, lns. 18-48).

It would have been obvious to a person with ordinary skill in the art at the time of invention of modify the teachings of Walker and Bhattacharjee with the teachings of Ng to utilize the plurality of versions of data with the motivation to enhance the complexity of accessing the database by more than one user (Ng: col. 1, lns. 66-col. 2, lns. 16).

Regarding Claims 2 and 6, Walker and Bhattacharjee and Ng disclose the system wherein one of the activities include a group of individual shared lock operations and the processor activates locks for each of the individual shared lock operations in the group and releases the locks only when the all of the individual shared lock operations in the group are completed (Bhattacharjee: pg. 5, [0149, 0061-0062]; Table 1) & (Walker: pg. 4, table 2)

Regarding Claims 4 and 8, Walker and Bhattacharjee and Ng disclose the system wherein the processor associates the activities with lock modes and releases the lock modes on data items when the associated activities are finished (Bhattacharjee: pg. 5, table 1; pg. 6, [081]).

Regarding claims 9 and 22, Walker and Bhattacharjee and Ng disclose the method including:

A). assigning a same unique activity identifier to multiple different arbitrary database access instructions that constitute the different activities in the transaction, the database access instructions performing one or more operations on multiple data items in a database and the activity identifier assigned to and associated with the database access instructions independently of any relationship that may exist between the multiple data

items in the database accessed by the database access instructions (Walker: pg. 5, [0079]; pg. 6, [0098, 0102]; pg. 9, [0133]);

B). assigning multiple locks to the multiple data items corresponding with the operations performed on the multiple data items pursuant to the database access instructions (Walker: pg. 5, [0079]; pg. 6, [0098]; pg. 7, [0105, 0108]; pg. 13, [0210]); and

C). preventing other transactions and other associated activities from accessing the multiple data items until all of the multiple operations are completed for all of the database access instructions assigned to the activity identifier (Bhattacharjee: pg. 5, [0062]).

Regarding claims 10, 14 and 18, Walker discloses a database management system, comprising:

A). a processor configured to assign activity identifiers to access instructions for a same transaction that each perform one or more operations on multiple data items in a database, the activity identifiers assigned to and associated with the database access instructions independently of any relationship that may exist between the multiple data items in the database accessed by the database access instructions, as the transaction manager generates a unique operation Ids (Walker: pg. 5, [0079]; pg. 6, [0098, 0102]; pg. 7, [0105]; pg. 9, [0133]).

B). the processor further configured to assign multiple locks to the multiple data items corresponding with the operations performed on the multiple data items pursuant to the database access instructions for all of the database access instructions assigned to the same activity identifiers, as a client operation is composed of multiple 'actions' and the

AgentReleaseAll request to release all locks held by the operation (Walker: pg. 5, [0079]; pg. 6, [0098]; pg. 7, [0105, 0108]; pg. 13, [0210]).

Walker does not explicitly disclose:

A). different individual subgroups of database;

B). associated with the same activity identifiers and further configured to only release the multiple locks when all of the multiple operations are completed

However, Bhattacharjee discloses:

B). further configured to only release the multiple locks when all of the multiple operations are completed, as no changes are allowed while being locked until the unit of work is completed (Bhattacharjee: pg. 5, [0062]).

It would have been obvious to a person with ordinary skill in the art at the time of invention to modify the teachings of Walker with the teachings of Bhattacharjee to utilize the the multi-level locking system with the motivation to enhance the method of releasing block locks (Bhattacharjee: pg. 2, [0017]).

Walker and Bhattacharjee does not explicitly disclose:

A). different individual subgroups of database;

B). associated with the same activity identifiers.

However, Ng discloses:

A)/B). different individual subgroups of database; associated with the same activity identifiers, as to different process ID identifies the process of which the transaction of block is a part (Ng: col. 5, lns. 18-48).

It would have been obvious to a person with ordinary skill in the art at the time of invention of modify the teachings of Walker and Bhattacharjee with the teachings of Ng to utilize the plurality of versions of data with the motivation to enhance the complexity of accessing the database by more than one user (Ng: col. 1, lns. 66-col. 2, lns. 16).

Regarding claims 11, 15 and 19, Walker and Bhattacharjee and Ng disclose the system wherein the processor is further configured to assign the activity identifiers to an arbitrary group of related database access instructions performing operations on an arbitrarily related group of data items (Walker: pg. 6, [0098, 0102]) and (Bhattacharjee: pg. 3, [0040]).

Regarding claims 12, 16 and 20, Walker and Bhattacharjee and Ng disclose the system wherein the processor is further configured to assign common transaction identifiers to different related groups of database access instructions assigned different activity identifiers and coordinate when the different related groups of database access instructions are allowed to perform operations on the data items (Walker: pg. 4, [0070], table 2).

Regarding claims 13, 17 and 21, Walker and Bhattacharjee and Ng disclose the system wherein the processor is configured to assign a first transaction identifier to a group of individual shared operations and assign locks to the data items associated with the shared operations, the processor further configured to hold the locks until all of the individual shared operations in the group have been completed (Walker: pg. 4, [0070-0071], table 2) and (Bhattacharjee: pg. 5, [0062]).

Regarding claim 23, Walker discloses a method comprising:

A). assigning a first activity identifier and a transaction identifier to a first group of database access instructions for a transaction, as the transaction manager generates a unique operation Ids (Walker: pg. 5, [0079]; pg. 6, [0098, 0102]);

B). assigning a first set of locks to a first set of data items accessed access instructions, as to multiple "actions" (Walker: pg. 5, [0079]; pg. 7, [0105, 0108]; pg. 13, [0210]);

E). assigning a second activity identifier and the same transaction identifier to a second group of database access instructions for, as the transaction manager generates a unique operation Ids (Walker: pg. 5, [0079]; pg. 6, [0098, 0102]);

F). assigning a second set of locks, as to multiple "actions" (Walker: pg. 5, [0079]; pg. 7, [0105, 0108]; pg. 13, [0210]); and

Walker does not explicitly disclose:

B). by the first group of database;

C). identifying a second subset of data items from the first set of data items according to the first group of database access instructions;

D). releasing the first set of locks when all of the operations for the first group of database access instructions have completed;

E). the same transaction that modify the second subset of data items identified by the first group of database access instructions;

F). to the second subset of data items,

G). releasing the second set of locks only when all of the operations for the second group of database access instructions have completed modification of the second subset of data items.

However, Bhattcharjee discloses:

D). releasing the first set of locks when all of the operations for the first group of database access instructions have completed, as no changes are allowed while being locked until the unit of work is completed (Bhattacharjee: pg. 5, [0062]);

G). releasing the second set of locks only when all of the operations for the second group of database access instructions have completed modification.

It would have been obvious to a person with ordinary skill in the art at the time of invention to modify the teachings of Walker with the teachings of Bhattacharjee to utilize the the multi-level locking system with the motivation to enhance the method of releasing block locks (Bhattacharjee: pg. 2, [0017]).

Walker and Bhattacharjee does not explicitly disclose:

B). by the first group of database;

C). identifying a second subset of data items from the first set of data items according to the first group of database access instructions;

E). the same transaction that modify the second subset of data items identified by the first group of database access instructions;

F). to the second subset of data items;

G). of the second subset of data items.

However, Ng discloses:

B). by the first group of database, as to different process ID identifying different transaction groups (Ng: col. 5, lns. 18-48);

C). identifying a second subset of data items from the first set of data items according to the first group of database access instructions, as to different process ID identifies the process of which the transaction of block is a part (Ng: col. 5, lns. 18-48);

E). the same transaction that modify the second subset of data items identified by the first group of database access instructions, as to different process ID identifying different transaction groups (Ng: col. 5, lns. 18-48);

F). to the second subset of data items, as to different process ID identifying different transaction groups (Ng: col. 5, lns. 18-48);

G). of the second subset of data items, as to different process ID identifying different transaction groups (Ng: col. 5, lns. 18-48).

It would have been obvious to a person with ordinary skill in the art at the time of invention of modify the teachings of Walker and Bhattacharjee with the teachings of Ng to utilize the plurality of versions of data with the motivation to enhance the complexity of accessing the database by more than one user (Ng: col. 1, lns. 66-col. 2, lns. 16).

10. Claims 3 and 7 are rejected under 35 U.S.C. 103(a) as being unpatentable over Walker in view of Bhattacharjee, further in view of Ng as applied to claims 1-2, 4-6, 8-23 above, and further in view of U.S. Patent No. 5,497,483 issued to Beardsley et al. (hereinafter Beardsley).

Regarding Claims 3 and 7, Walker and Bhattacharjee and Ng disclose the system including individual activities for the transaction, the processor assigning activity identifiers to the activities (Bhattacharjee: pg. 5, table 1, [0066-0067]; pg. 6, table 2; pg. 8, [0100]).

Walker and Bhattacharjee and Ng does not explicitly disclose: memory containing a bit map that tracks activities.

However, Beardsley disclose: memory containing a bit map that tracks activities and (Beardsley: col. 10, lns. 7-18; fig. 9).

It would have been obvious to a person with ordinary skill in the art at the time of invention to modify the teachings of Walker, Bhattacharjee and Ng with the teachings of Beardsley to utilize the bit map setting with the motivation to enhance the controlling of a track transfers (Beardsley: col. 9, lns. 53-66).

Response to Arguments

11. Applicant's arguments with respect to claims 1-23 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

12. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Monica M. Pyo whose telephone number is 571-272-8192. The examiner can normally be reached on Mon & Thur 8:00 - 5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Apu Mofiz can be reached on 571-272-4080. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Monica M Pyo
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7/21/2007

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